UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/497,292	02/03/2000	Michael A. Marino JR.	CASPR-004A	7318

27547 7590 11/15/2004

MURPHEY & MURPHEY, A.P.C.
701 PALOMAR AIRPORT ROAD, SUITE 260
CARLSBAD, CA 92009

EXAMINER	
BURD, KEVIN MICHAEL	
ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/497,292	MARINO, MICHAEL A.	
	Examiner	Art Unit	
	Kevin M. Burd	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *40-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *40-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This office action, in response to the Remand to the Examiner mailed 7/29/2004, is a non-final office action.

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

3. In view of the appeal brief filed 11/26/2002 and the remand to Examiner mailed 7/29/2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

4. The examiner has reviewed the exhibits provided for secondary consideration. After weighting the objective evidence, the results of commercial success were not

convincing enough to convince the examiner that the claimed invention is patentable. When an applicant >timely< submits evidence traversing a rejection, the examiner must reconsider the patentability of the claimed invention. The ultimate determination of patentability must be based on consideration of the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary evidence. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). Although the record may establish evidence of secondary considerations which are indicia of nonobviousness, the record may also establish such a strong case of obviousness that the objective evidence of nonobviousness is not sufficient to outweigh the evidence of obviousness. Newell Cos. v. Kenney Mfg. Co., 864 F.2d 757, 769, 9 USPQ2d 1417, 1427 (Fed. Cir. 1988), cert. denied, 493 U.S. 814 (1989). The submission of objective evidence of patentability does not mandate a conclusion of patentability in and of itself. In re Chupp, 816 F.2d 643, 2 USPQ2d 1437 (Fed. Cir. 1987). If, after evaluating the evidence, the examiner is still not convinced that the claimed invention is patentable, the next Office action should include a statement to that effect and identify the reason(s) (e.g., evidence of commercial success not convincing, the commercial success not related to the technology, etc.). See Demaco Corp. v. F. Von Langsdorff Licensing Ltd., 851 F.2d 1387, 7 USPQ2d 1222 (Fed. Cir.), cert. denied, 488 U.S. 956 (1988). Additional information about weighting of objective evidence can be found in MPEP 716.01 (d) [R-2].

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 40-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 40, Applicant discloses digitizing and demodulating the received ambient RF signals and the received radiated RF emissions in the first receiver. Applicant also discloses demodulating and digitizing the received ambient RF signals in the second RF receiver. Applicant states a central computer being operative to store and process the ambient signals and the radiated emissions from the respective ones of said first and said second receivers (in heading f)). However the central computer does not receive the ambient signals and the radiated emissions. It receives the demodulated and digitized ambient RF signals and the demodulated and digitized radiated RF emissions from the first receiver and the demodulated and digitized ambient RF signals from the second receiver. Correction to claim 40 is necessary or additional clarification is needed since the central computer does not appear to receive the modulated analog ambient RF signals and radiated RF emissions that are initially received in the first and second receivers. Claims 41-53 are rejected due to dependence on claim 40.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 40-56, 63 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mesecher et al (US 6,289,004) in view of Clough et al (US 4,672,674).

Regarding claims 40, 43-46 and 54-56, Mesecher discloses a system for suppressing interference signals from a desired signal. A first RF receiver receives a signal such that the only large signal received by the auxiliary antenna is the signal from the interferer (column 3, line 65 to column 4, line 2). The main antenna receives the desired signal and a noise component of the interferer. Both antennas are located in the same apparatus as shown in figure 3B. The interferer signal is subtracted from the signal of the main antenna thereby deriving a signal substantially free from the interference source (column 4, lines 25-29). Figure 12 shows the received signals are input to RF receivers. The RF receivers will demodulate the data before inputting the signals to the interference canceller (column 9, lines 61-67). In addition, the received signals are required to be synchronized before subtraction can take place (column 10, lines 8-10). The result of the subtraction is processed and stored in the modem shown in figure 5.

Mesecher does not disclose the received signals are digitized prior to the subtraction taking place. Clough discloses interference cancellation of base band

signals. The desired signal is a voice signal so it is already at base band. These base band signals are filtered by band pass filters 3, 4 and are digitized as shown in figure 1. The digitized signals are weighted and subtracted in subtractor 12 (column 4, lines 26-28). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the digitization and canceling of the sampled signals of Clough into the interference canceller of Mesecher. By digitizing the signals, the signals samples are stored in memory and progressively removed from store (column 3, lines 36-37). This storage of the samples allows for an update of the weighted interfering signals to take place in element 11 of Clough to improve the signal to noise ratio of the recovered signal (column 7, lines 34-35). The sampled signals are also capable of being manipulated and processed (column 3, lines 39-46). This is described in column 6, line 59 to column 7, line 32 of Clough. Mesecher does not disclose being capable of updating the weighted amplifier shown in figures 10, item 151 and figure 12, item 189 (column 9, lines 24-32).

Regarding claims 41 and 42, Mesecher further discloses converting the received signals into a corresponding voltage (figure 12). Mesecher does not disclose converting the received signals into a corresponding electrical current. However, it would have been obvious for one of ordinary skill in the art at the time of the invention to convert the received signals into a corresponding electrical current. By converting the signals into electrical current, only a minimal loss of signal strength would occur to the signal while traveling along the electrical conducting cable link as compared to a greater loss in voltage form do to the resistance of the wire.

Regarding claims 47-49, 52, 53, 63 and 64, Mesecher discloses the receivers are synchronized (column 10, lines 8-10). It is inherent that clock signals must be transmitted to each of the receivers to maintain this synchronization.

Regarding claims 50 and 51, Mesecher discloses in figure 3B the auxiliary antenna is capable of receiving numerous signals from the interferer to receive the most accurate representation of the interferer signal. The same principle can be used for the main antenna.

7. Claims 57-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mesecher et al (US 6.289.004) in view of Clough et al (US 4,672,674) further in view of the instant applications admitted prior art.

Regarding claims 57-62, the combination of Mesecher and Clough discloses a system for suppressing noise signals from a signal containing both a desired data signal and noise signals as stated above in paragraph 6. Mesecher further discloses adaptive filtering means is conducted to recover the desired data signal (figure 12). However, the combination of Mesecher and Clough does not disclose how this calculation is computed. "The two most common classes of adaptive filter algorithms are Stochastic Gradient based algorithms and Least-square based algorithms" page 16 lines 21-23 of the instant application. It would have been obvious for one of ordinary skill in the art to use the most common types of adaptive algorithms in the adaptive filtering conducted by Mesecher since these types of algorithms are the most widely used.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Burd
11/14/2004

KEVIN BURD
PRIMARY EXAMINER